



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAK00001VA**  
Revision No:  
**2**

## This is to certify:

that the Synthetic Fibre Ropes

with type designation(s)  
**TUFFLEX LITE 8 and TUFFLEX LITE 12 Mooring Lines,**  
**TUFFLEX LITE 8 and TUFFLEX LITE 12 Mooring Tails**

issued to

**TUFNETS PRIVATE LIMITED**  
**Pithampur, Madhya Pradesh, India**

is found to comply with

**DNV class programme DNV-CP-0100 – Type approval – Synthetic fibre ropes for towing, mooring and anchoring**  
**ISO 10556:2009 "Fibre ropes of polyester/polyolefin dual fibres"**  
**OCIMF Mooring Equipment Guidelines (MEG4), Fourth Edition 2018 [test requirements]**

## Application:

**Mooring and Towing of Ships and HSLCs.**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

Issued at **Hamburg** on **2026-05-26**

This Certificate is valid until **2030-05-13**.

DNV local unit: **India CMC MES**

Approval Engineer: **Gisle Hersvik**

for **DNV**



Digitally Signed By:  
**Stefan Röhr**  
Location: **DNV Hamburg,**  
**Germany**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

## Product description

**TUFFLEX LITE 8:** 8-strand plaited / braided synthetic fibre rope  
**TUFFLEX LITE 12:** 12-strand plaited / braided synthetic fibre rope

- *Fibre material: Polyester/Polyolefin dual fibres*
- *Specific gravity: 0.97 (floats in seawater)*
- *With or without marine finish.*
- *UV-stabilized.*
- *Double construction: Mixed (PP+Polyester) Yarn. Outer Polyolefin yarn covered with high tenacity polyester (HT PES) yarn.*

### **Compliance with OCIMF Mooring Equipment Guidelines (MEG4)**

Mooring Line Base Design Certificate - For TUFFLEX LITE 32 mm and 96 mm  
Certificate No.: - TN/MEG4/MLBDC/TFL/26/00 REV-02 Issued date: 2026-03-23 [Expiry date: 2030-05-13]  
Mooring Line Certificates will be issued with reference to Mooring Line Base Design Certificate.

Mooring Tail Base Design Certificate - For TUFFLEX LITE 32 mm and 96 mm  
Certificate No.: - TN/MEG4/MTBDC/TFL/26/00 REV-02 Issued date: 2026-03-23 [Expiry date: 2030-05-13]  
Mooring Tail Certificates will be issued with reference to Mooring Tail Base Design Certificate.

TUFNETS PRIVATE LIMITED has performed the full test scenario as per OCIMF MEG4.

The Mooring Line Base Design Certificate shall be maintained in accordance with OCIMF MEG4.

### **Rope Characteristics**

The Rope characteristics are tabulated on the next page observing the following:

Fibre ropes are to be delivered with a linear density  $\pm 5\%$  of the nominal linear density given in the table.

All Break Force values are given for both un-spliced and spliced ropes.

The LDBF (Line Design Break Force) and TDBF (Tail Design Break Force) values are given for the spliced ropes.

**TUFFLEX LITE 8 - TUFFLEX LITE 12:**

Ref. Number / Size		Linear Density -rope	Mass -rope	Breaking Load [Kg]	
Diameter [mm]	Circ. [Inch]	[g/m]	[kg/220m]	Un-spliced	Spliced (LDBF)
32	4	500	111.00	17900	16110
36	4-1/2	640	141.00	24000	21600
40	5	.790	174.00	29100	26190
44	5-1/2	960	212.00	37300	33570
48	6	1150	252.00	44400	39960
52	6-1/2	1340	295.00	51600	46440
56	7	1560	343.00	59200	53280
60	7-1/2	1800	395.00	67400	60660
64	8	2040	448.00	75900	68310
68	8-1/2	2300	505.00	85200	76680
72	9	2570	566.00	91600	82440
76	9-1/2	2870	632.00	103400	93060
80	10	3190	701.00	116000	104400
84	10-1/2	3520	774.00	127700	114930
88	11	3860	850.00	140000	126000
96	12	4580	1007.00	165500	148950

The data in the table is provided by TUFNETS PRIVATE LIMITED.

**Application/Limitation**

The approval covers ropes with diameter from 32 mm to and including 96 mm.

The OCIMF MEG4 approval range covers ropes with diameter from 32 mm to and including 96 mm.

**Manufactured by**

**TUFNETS PRIVATE LIMITED Unit 1**, Indore SEZ Phase-I, Sector-III, Plot No D-1 to 12, B-1, 2 & F-3 to 5, Pithampur-454775, Dist.-Dhar-454775, Madhya Pradesh, India

**TUFNETS PRIVATE LIMITED Unit 2**, Indore SEZ Phase-I, Sector-III, F-I & F-2, Pithampur-454775, Dist.-Dhar-454775, Madhya Pradesh, India

DNV local station: Mumbai

**Responsibility**

The Company (stated on the front page of this Certificate) takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

The Company accepts sole responsibility for product conformity to applicable DNV requirements and agrees to periodical assessments per DNV-CP-0338, granting DNV surveyors access to its own premises and to the premises of all companies manufacturing the type-approved products within the scope of this certificate.

#### Sales and Labelling Coverage:

This Type Approval is equally valid for TUFFLEX LITE ropes sold by Cortland International Inc. (Canada) and/or other affiliated Cortland sales entities, provided that:

- (i) the rope is manufactured at one of the approved sites named in this certificate;
- (ii) the rope is marked and documented in accordance with DNV-CP-0100 and the 'Marking of product' section; and
- (iii) full traceability to this Type Approval Certificate (TAK00001VA) is maintained in sales documentation and product tags/labels. This clause clarifies commercial coverage only and does not expand the approved manufacturing scope.

#### Type Approval documentation

1. Assessment Report from DNV Mumbai of 2026-04-27.
2. Tufropes' "Instruction for use (ROPE)".
3. 'Test Report – Tufflex Lite Rope' (Mooring Tail testing overview)
4. 'Test Report – Tufflex Lite Rope' (Mooring Lines testing overview)
5. Supplier's Declaration about absence of Asbestos of 2026-02-04
6. Design Specification (TUFFLEX LITE) DS/MEG4/003 of 2019-06-20.
7. Application for Type Approval of 2025-10-16.

#### TEST PROCEDURES:

Please note that specific test procedures are not developed by TUFNETS PRIVATE LIMITED, but relevant procedures and test methods specified by OCIMF MEG4, and test methods normally used within the industry, have been used and reviewed by the Independent inspector on site.

#### MOORING LINE:

8. Linear Density, 32 and 96 mm, (B8.5.1)
9. Diameter, 32 and 96 mm, (B8.5.2)
10. New Straight Break Force, 32 mm, (B8.5.3)
11. New Straight Break Force, 96 mm, (B8.5.3)
12. Immediate Strain, 32 and 96 mm, (B8.5.4)
13. Angled Break Force, 32 mm, D/d 10, (B8.5.6)
14. Angled Break Force, 32 mm, D/d 5, (B8.5.6)
15. Material Break Force at Specified Temperature, Polypropylene, 2025-09-03 to 2025-09-08 (B8.5.9)
16. Material Break Force at Specified Temperature, Polyester, 2025-09-21 to 2025-10-01 (B8.5.9)
17. Testing Calculations Mooring Line – Line Linear Density, Load Bearing Line Linear Density, Line Tenacity, Maximum Tenacity, New Straight Break Force, Angled Break Force (D/d 5), Angled Break Force (D/d 10), Angled Endurance (D/d 5), Angled Endurance (D/d 10), Immediate Strain and Axial Compression Resistance.

#### MOORING TAIL:

18. Linear Density, 32 and 96 mm, (B8.5.1)
19. Diameter, 32 and 96 mm, 2019-06-28 (B8.5.2)
20. New Straight Break Force, 32 mm, (B8.5.3)
21. New Straight Break Force, 96 mm, (B8.5.3)
22. Immediate Strain, 32 and 96 mm, (B8.5.4)
23. Sheltered Dynamic Stiffness, 32mm, (B8.5.5)
24. Exposed Dynamic Stiffness, 32 mm, (B8.5.5)
25. Axial Compression Fatigue, 32 mm, (B8.5.10)
26. Angled Endurance D/d 5 and D/d 10, 32 mm, (B8.5.7)
27. Tension-Tension Endurance, 32 mm, (8.5.8)
28. Testing Calculations Mooring Tail – Line Linear Density, Load Bearing Line Linear Density, Tail Tenacity, Maximum Tenacity, New Straight Break Force, Sheltered Stiffness, Exposed Stiffness, Tension-Tension Endurance.

#### MEG4 CERTIFICATES (2026):

29. B12.5- Mooring Line Base Design Certificate 32 mm & 96 mm – TUFFLEX LITE,
  - o Certificate No.: - TN/MEG4/MLBDC/TFL/26/00 REV-02
30. B12.7-Mooring Line Certificate 32 mm – TUFFLEX LITE (example),
  - o Certificate No.: - TN/MEG4/MLC/TUFFLEX LITE/26/00 REV-02
31. B12.7-Mooring Line Certificate 96 mm – TUFFLEX LITE (example),
  - o Certificate No.: - TN/MEG4/MLC/TUFFLEX LITE/26/00 REV-02
32. B12.6- Mooring Tail Base Design Certificate 32 mm & 96 mm – TUFFLEX LITE,
  - o Certificate No.: - TN/MEG4/MTBDC/TFL/26/00 REV-02
33. B12.8-Mooring Tail Certificate 32 mm – TUFFLEX LITE (example),
  - o Certificate No.: - TN/MEG4/MTC/TUFFLEX LITE/26/00 REV-02
34. B12.8-Mooring Tail Certificate 96 mm – TUFFLEX LITE (example),
  - o Certificate No.: - TN/MEG4/MTC/TUFFLEX LITE/26/00 REV-02



Job ID: **262.1-031091-5**  
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## Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, and according to:

- OCIMF's Mooring Equipment Guidelines (MEG4) [requirements to testing].
- DNV-CP-0100.

The fibre ropes are manufactured in accordance with:

- Design Specification (TUFFLEX LITE) DS/MEG4/003 of 2019-06-20.

## Marking of product

Product shall be marked with *manufacturer's name*: Cortland International or its affiliates, *type designation*, *weight* and *length*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV Type Approval Certificate.

## Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical assessments (for Certificate Retention / Certificate Renewal) shall be performed according to DNV-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE